

ABSTRACT OF THE DISCLOSURE

The present application describes methods for the testing of compounds of potential usefulness as therapeutic antioxidants and/or as therapeutic free radical scavengers. The animal model for testing such compounds is the Sod2CJE homozygous Manganese Superoxide Dismutase-deficient mouse. When pups of these mice are treated with certain antioxidants, they survive past about 7 days of age, and later develop characteristic histological changes and characteristic neurobehavioral disorders. Those treated mice can be further treated with test compounds which may or may not cross the blood brain barrier, and the life span and physical and neurobehavioral characteristics of those mice provide information about the potential utility of the test compound as a therapeutic antioxidant. Phenotypes of the treated mice allow conclusions regarding targeted areas of the brain and thus, applications to particular disorders such as Parkinsonism.